



M10988. Reports Human tumor necro...[gi:339737] Links

LOCUS HUMTNFAA 1585 bp mRNA Linear PRI 14-JAN-1995
DEFINITION Human tumor necrosis factor (TNF) mRNA.
ACCESSION M10988
VERSION M10988.1 GI:339737
KEYWORDS
SOURCE Homo sapiens (human)
ORGANISM Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE 1 (bases 1 to 1585)
AUTHORS Wang, A. M., Creasey, A. A., Ladner, M. B., Lin, L. S., Strickler, J., Van Arsdell, J. N., Yamamoto, R. and Mark, D. F.
TITLE Molecular cloning of the complementary DNA for human tumor necrosis factor
JOURNAL Science 228 (4696), 149-154 (1985)
MEDLINE 85142190
PUBMED 3856324
COMMENT Original source text: Human cDNA to mRNA, clone pE4.
FEATURES Location/Qualifiers
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/map="6p21.3"
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CDS 86.. 787
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//

		BLink, Domains, Links
1:	<u>Q8HZD9</u> . Reports Tumor necrosis fa... [gi:31077029]	
LOCUS	Q8HZD9	232 aa linear PRI 15-JUN-2004
DEFINITION	Tumor necrosis factor precursor (TNF-alpha) (Tumor necrosis factor ligand superfamily member 2) (TNF-a) (Cachectin).	
ACCESSION	Q8HZD9	
VERSION	Q8HZD9 GI:31077029	
DBSOURCE	swissprot: locus TNFA_PANTR, accession Q8HZD9; class: standard. created: Oct 10, 2003. sequence updated: Oct 10, 2003. annotation updated: Jun 15, 2004. xrefs: gi: 18181946 , gi: 18181948 , gi: 32127763 , gi: 32127765 , gi: 23379678 , gi: 23379679 xrefs (non-sequence databases): HSSPP01375, InterProIPR006053, InterProIPR006052, InterProIPR008983, InterProIPR003636, PfamPF00229, PRINTSPR01234, ProDomPD002012, PROSITEPS00251, PROSITEPS50049	
KEYWORDS	Cytokine; Transmembrane; Signal-anchor; Phosphorylation.	
SOURCE	Pan troglodytes (chimpanzee)	
ORGANISM	<u>Pan troglodytes</u> Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.	
REFERENCE	1 (residues 1 to 232)	
AUTHORS	Kulski, J.K., Shiina, T., Anzai, T., Kohara, S. and Inoko, H.	
TITLE	Comparative genomic analysis of the MHC: the evolution of class I duplication blocks, diversity and complexity from shark to man	
JOURNAL	Immunol. Rev. 190, 95-122 (2002)	
MEDLINE	22381002	
PUBMED	12493009	
REMARK	SEQUENCE FROM N.A.	
REFERENCE	2 (residues 1 to 232)	
AUTHORS	Anzai, T., Shiina, T., Kimura, N., Yanagiya, K., Kohara, S., Shigenari, A., Yamagata, T., Kulski, J.K., Naruse, T.K., Fujimori, Y., Fukuzumi, Y., Yamazaki, M., Tashiro, H., Iwamoto, C., Umehara, Y., Imanishi, T., Meyer, A., Ikeo, K., Gojobori, T., Bahram, S. and Inoko, H.	
TITLE	Comparative sequencing of human and chimpanzee MHC class I regions unveils insertions/deletions as the major path to genomic divergence	
JOURNAL	Proc. Natl. Acad. Sci. U.S.A. 100 (13), 7708-7713 (2003)	
MEDLINE	22709134	
PUBMED	12799463	
REMARK	SEQUENCE FROM N.A.	

REFERENCE 3 (residues 1 to 232)

AUTHORS O'Huigin, C., Tichy, H. and Klein, J.

TITLE Direct Submission

JOURNAL Submitted (??-MAR-2002)

REMARK SEQUENCE OF 33-186 FROM N.A.

COMMENT

This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. The original entry is available from <http://www.expasy.ch/sprot> and <http://www.ebi.ac.uk/sprot>

[FUNCTION] Cytokine that binds to TNFRSF1A/TNFR1 and TNFRSF1B/TNFBR. It is mainly secreted by macrophages and can induce cell death of certain tumor cell lines. It is potent pyrogen causing fever by direct action or by stimulation of interleukin 1 secretion and is implicated in the induction of cachexia. Under certain conditions it can stimulate cell proliferation and induce cell differentiation (By similarity).

[SUBUNIT] Homotrimer (By similarity).

[SUBCELLULAR LOCATION] Type II membrane protein. Also exists as an extracellular soluble form (By similarity).

[PTM] The soluble form derives from the membrane form by proteolytic processing (By similarity).

[PTM] The membrane form, but not the soluble form, is phosphorylated on serine residues. Dephosphorylation of the membrane form occurs by binding to soluble TNFRSF1A/TNFR1 (By similarity).

[SIMILARITY] Belongs to the tumor necrosis factor family.

FEATURES	Location/Qualifiers
<u>source</u>	1..232 /organism="Pan troglodytes" /db_xref="taxon:9598"
<u>gene</u>	1..232 /gene="TNF" /note="synonyms: TNFSF2, TNFA"
<u>Protein</u>	1..232 /gene="TNF" /product="Tumor necrosis factor precursor"
<u>Region</u>	1..232 /gene="TNF" /region_name="Mature chain" /note="Tumor necrosis factor, membrane form (By similarity)."

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58..232  
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76..77  
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77..232  
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ORIGIN

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		Links
1:	<u>X02910</u> . Reports Human gene for tu... [gi:37209]	
LOCUS	HSTNFA 3634 bp DNA linear	PRI 17-FEB-1997
DEFINITION	Human gene for tumor necrosis factor (TNF-alpha).	
ACCESSION	X02910 X02159	
VERSION	X02910.1 GI:37209	
KEYWORDS	signal peptide; tumor necrosis factor.	
SOURCE	Homo sapiens (human)	
ORGANISM	<u>Homo sapiens</u>	
	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;	
	Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.	
REFERENCE	1	
AUTHORS	Pennica, D., Nedwin, G. E., Hayflick, J. S., Seeburg, P. H., Derynck, R., Palladino, M. A., Kohr, W. J., Aggarwal, B. B. and Goeddel, D. V.	
TITLE	Human tumour necrosis factor: precursor structure, expression and homology to lymphotoxin	
JOURNAL	Nature 312 (5996), 724-729 (1984)	
MEDLINE	<u>85086244</u>	
PUBMED	<u>6392892</u>	
REFERENCE	2 (bases 329 to 3634)	
AUTHORS	Shirai, T., Yamaguchi, H., Ito, H., Todd, C. W. and Wallace, R. B.	
TITLE	Cloning and expression in Escherichia coli of the gene for human tumour necrosis factor	
JOURNAL	Nature 313 (6005), 803-806 (1985)	
MEDLINE	<u>85137898</u>	
PUBMED	<u>3883195</u>	
REFERENCE	3 (bases 1 to 3634)	
AUTHORS	Nedwin, G. E., Naylor, S. L., Sakaguchi, A. Y., Smith, D., Jarrett-Nedwin, J., Pennica, D., Goeddel, D. V. and Gray, P. W.	
TITLE	Human lymphotoxin and tumor necrosis factor genes: structure, homology and chromosomal localization	
JOURNAL	Nucleic Acids Res. 13 (17), 6361-6373 (1985)	
MEDLINE	<u>86016093</u>	
PUBMED	<u>2995927</u>	
COMMENT	In the cDNA sequence from ref [3] the mature protein site starts also with Val at pos 1631 Data kindly reviewed (18-FEB-1986) by A. Sakaguchi.	
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<u>polyA site</u>	3381

ORIGIN

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3601 ctcaggccat gggaaatttcc aactctggta attc

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Molecular cloning of the complementary DNA for human tumor necrosis factor.

Wang AM, Creasey AA, Ladner MB, Lin LS, Strickler J, Van Arsdell JN, Yamamoto R, Mark DF.

Tumor necrosis factor (TNF) is a soluble protein that causes damage to tumor cells but has no effect on normal cells. Human TNF was purified to apparent homogeneity as a 17.3-kilodalton protein from HL-60 leukemia cells and showed cytotoxic and cytostatic activities against various human tumor cell lines. The amino acid sequence was determined for the amino terminal end of the purified protein, and oligodeoxyribonucleotide probes were synthesized on the basis of this sequence. Complementary DNA (cDNA) encoding human TNF was cloned from induced HL-60 messenger RNA and was confirmed by hybrid-selection assay, direct expression in COS-7 cells, and nucleotide sequence analysis. The human TNF cDNA is 1585 base pairs in length and encodes a protein of 233 amino acids. The mature protein begins at residue 77, leaving a long leader sequence of 76 amino acids. Expression of high levels of human TNF in *Escherichia coli* was accomplished under control of the bacteriophage lambda PL promoter and gene N ribosome binding site.